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ABSTRACT

A study was undertaken to observe the frequency of play of 30 preschool handicapped children (physically, emotionally, or hearing impaired) in either a mainstreamed or segregated setting. Each S was observed 6 times over a 7 month period. Results showed a higher frequency of play in the mainstreamed preschool classroom, and that adult initiated play is more frequent in segregated classrooms. Mainstreamed hearing impaired preschoolers had the highest frequency of play in the onlooking category and solitary play was most frequent among emotionally disturbed segregated Ss. Evaluation forms are appended. (PFR)

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A YEAR LONG STUDY OF THE FREQUENCY OF PLAY INTERACTIONS
OF HANDICAPPED PRESCHOOLERS IN MAINSTREAMED
AND SEGREGATED CLASSROOMS

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Studies on Self-Concept and Social Interaction of
Young Handicapped Children

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AND SEGREGATED CLASSROOMS

This year long study was designed to observe the frequency of play of handicapped children in both segregated and mainstreamed preschool classrooms. One of the assumptions of Public Law 94-142 is that handicapped and nonhandicapped peers will interact in a mainstreamed classroom setting, thus giving the handicapped child a normal model. However, the available research data on handicapped and nonhandicapped preschoolers, in play settings, has not validated this assumption. Much of the current research trains the non-handicapped child to interact with the handicapped peer. This study is designed to observe spontaneous play interactions between handicapped and nonhandicapped preschoolers.

This research is an attempt to explore and describe the various types of play behaviors of handicapped children in both segregated and mainstreamed preschool settings. There are few primary studies which have compared the play behavior in both types of settings, that is, segregated and mainstreamed classrooms. K. Eileen Allen, of the University of Kansas, and Michael Guralnick, of Ohio State University, have studied play behaviors of handicapped children in segregated settings and in reversed mainstreamed classrooms.

Allen's (1977) studies have revealed that specific curriculum manipulations are needed in the classroom to encourage the non-handicapped peers to interact and play with the handicapped peers consistently. Her settings have included a wide range of handicaps, focusing on the physically impaired.

Guralnick's (1978) early studies are based on the observation that preschool handicapped children do not interact in play. His studies have indicated that with teacher-directed group dynamics, nonhandicapped preschoolers interact in structured play situations with mentally impaired peers. However, data collected in late 1977 do not confirm the early findings.

It is therefore important that baseline studies on the frequency of play interactions of handicapped preschoolers in mainstreamed and segregated classrooms begin. The organization of this study can be summarized as follows:

1. The study uses the Parten Play categories and Piaget types of play behavior to describe the play behaviors exhibited by handicapped preschoolers who are emotionally impaired, physically impaired and hearing impaired, in segregated preschool classrooms.
2. The study uses the various Parten Play categories and Piaget types of play behavior to describe the play behaviors exhibited by preschoolers who are emotionally impaired, physically impaired and hearing impaired in mainstreamed preschool classrooms.

3. The study provides information on adult initiated play and whether the segregated or mainstreamed setting uses the greatest amount of adult initiated play.

Hypothesis 1:

There will be a higher frequency of play in segregated settings than in mainstreamed settings.

Hypothesis 2:

Depending on the category of handicapped, emotional impairment, physical impairment or hearing impairment, the predominant category of the frequency of play will be varied in the mainstreamed and segregated settings.

Hypothesis 3:

There will be a larger number of adult initiated behaviors by teachers/aides in the segregated settings, than in the mainstreamed settings.

Assumptions and Limitations

These assumptions were recognized in the study:

1. The age and developmental range of the handicapped and preschool children consists of three, four, and five year olds, with varying abilities and developmental levels.
2. The instruments used provide data that reflect the Parten categories and Piaget types of play behaviors of handicapped and nonhandicapped preschoolers, as well as child or adult initiated play.
3. It is recognized that instruments other than Parten categories and Piaget levels of play measure information on preschool settings.

4. All preschool sites are developmentally based. That is, the curriculums incorporate free play during the day and were designed to meet individual needs.

The following limitations restrict the findings of this study to the population studied:

1. Mainstreaming preschool handicapped children is a new concept; therefore sites with children in the identified categories were difficult to match to the segregated preschool settings.
2. There is sole reliance on observation by the investigator.

The design of this study is descriptive and includes an analysis of frequency of play of handicapped children, in both mainstreamed and segregated preschool classrooms. Suitable subjects and settings were identified and data were collected and treated in a manner appropriate to small sample studies.

Data Gathering Instruments

Two instruments were used to collect data.

(1) Instrument A consisted of a checklist describing the physical setting of each preschool site. The evaluation of each classroom included the name of site, type of program, location, the amount of equipment and its availability to students, financing of the program, target population, philosophy of the program, racial composition, age levels of children and handicaps. Other items included the length and structure of the daily curriculum, qualifications of staff and the adult-child ratio. The teacher was also

asked if, on the day of the observation, it were a typical day in the classroom; that is, one free of scheduled extra activities. This was completed after the observation at each site. The instrument was designed by Dr. Doris Sponseller, Associate Dean of the School of Education, Oakland University, and modified by the researcher for this study.

(2) Instrument B recorded all play actions of handicapped subjects during the forty-five minutes of free play time in each classroom. It also identified whether the play action was child-initiated (CI) or adult-initiated (AI). The thirty handicapped preschoolers (fifteen children from segregated classes; fifteen children from mainstreamed settings) were identified as emotionally impaired, physically impaired or hearing impaired and certified special education students according to the Michigan Certification Code. Play frequencies in the play categories were recorded. The instrument was designed by Dr. Doris Sponseller and has been used in numerous play observations for research purposes in the toddler, preschool and preprimary programs in the Matthew Lowry Early Childhood Center, Oakland University, Rochester, Michigan. It has been used extensively for data collection by the Oakland University Early Childhood faculty and graduate students. Instrument B combined Parten's categories of play with Piaget's levels of play behavior. The instrument identified each category of play, i.e., onlooking, solitary,

parallel, associative and cooperative, as well as the Piaget levels of practice play, symbolic play, or play with games and rules.

Subjects and Settings

Thirty preschool handicapped children were chosen for the study: Fifteen handicapped children, in segregated preschool special education classrooms, were certified, following the Michigan Certification Code, as emotionally impaired, physically impaired and hearing impaired and fifteen mainstreamed handicapped preschoolers, also certified, according to the Michigan Certification Code, in the three above-mentioned special education categories.

Each subject was observed twice, one week apart, during the last two weeks in September, 1979 and the first two weeks in October, 1979 and again in March, 1980. Conditions for the study were:

1. Before the observation, the teacher was questioned as to whether or not the classroom would have unusual disruptions or if there were excessive absences.
2. The investigator entered the classroom as unobtrusively as possible, with no recognition from the teachers or aides, or explanation to the students, and collected the data in an observation room with a two-way glass, if available. If there were no observation area, the investigator chose an isolated area in the room to record the data.
3. The investigator avoided eye contact or any verbal interaction with subjects, if data were collected in the classroom.

Table 1

FREQUENCY SCORES OF LEVELS OF PLAY OF HANDICAPPED AND NONHANDICAPPED
PRESCHOOLERS IN MAINSTREAMED AND SEGREGATED SETTINGS

PIAGET'S PLAY LEVELS

Subjects	Practice		Symbolic		Games With Rules	
	F '79	S '80	F '79	S '80	F '79	S '80
Handicapped						
Mainstreamed	304	380	16	18	2	5
Segregated	259	261	18	19	0	0
TOTALS	563	641	34	37	2	5

PARTEN'S PLAY CATEGORIES

Subjects	Onlooking		Solitary		Parallel Play		Associative Play		Cooperative Play	
	F '79	S '80	F '79	S '80	F '79	S '80	F '79	S '80	F '79	S '80
Handicapped										
Mainstreamed	202	189	86	75	96	102	5	12	6	14
Segregated	165	171	50	40	32	35	0	0	0	5
TOTALS	367	360	136	115	128	137	5	12	6	19

F = Fall
S = Spring

Table 2

MEAN SCORES OF FREQUENCIES OF PLAY INTERACTIONS IN
THE PARTEN CATEGORIES OF PLAY BY CATEGORIES OF
IMPAIRMENT IN MAINSTREAMED AND
SEGREGATED SETTINGS

Group 1 — Emotionally Impaired Mainstream Subjects
Group 2 — Emotionally Impaired Segregated Subjects
Group 3 — Hearing Impaired Mainstream Subjects
Group 4 — Hearing Impaired Segregated Subjects
Group 5 — Physically Impaired Mainstream Subjects
Group 6 — Physically Impaired Segregated Subjects

FALL 1979			SPRING 180		
Variable	Number of Cases	Mean	Variable	Number of Cases	Mean
Onlooking			Onlooking		
Group 1	5	0.0	Group 1	5	0.0
Group 2	5	0.1	Group 2	5	0.2
Group 3	5	1.6*	Group 3	5	1.9*
Group 4	5	0.9	Group 4	5	1.0
Group 5	5	0.0	Group 5	5	0.0
Group 6	5	0.0	Group 6	5	0.0
Solitary			Solitary		
Group 1	5	5.6	Group 1	5	5.9
Group 2	5	8.7*	Group 2	5	8.9*
Group 3	5	4.2	Group 3	5	4.5
Group 4	5	6.5	Group 4	5	6.8
Group 5	5	5.2	Group 5	5	5.1
Group 6	5	5.3	Group 6	5	5.9
Parallel			Parallel		
Group 1	5	9.4	Group 1	5	9.4
Group 2	5	5.3	Group 2	5	5.9
Group 3	5	9.4	Group 3	5	10.1
Group 4	5	6.4	Group 4	5	6.6
Group 5	5	10.2*	Group 5	5	10.8*
Group 6	5	7.6	Group 6	5	7.9

FALL 1979			SPRING 1980		
Variable	Number of Cases	Mean	Variable	Number of Cases	Mean
Associative			Associative		
Group 1	5	4.4*	Group 1	5	5.1*
Group 2	5	2.2	Group 2	5	2.9
Group 3	5	3.2	Group 3	5	2.3
Group 4	5	1.7	Group 4	5	2.6
Group 5	5	2.8	Group 5	5	1.9
Group 6	5	2.7	Group 6	5	2.8
Cooperative			Cooperative		
Group 1	5	1.4	Group 1	5	1.7
Group 2	5	1.2	Group 2	5	.9
Group 3	5	1.6*	Group 3	5	2.1*
Group 4	5	0.8	Group 4	5	0.6
Group 5	5	1.4	Group 5	5	1.5
Group 6	5	1.0	Group 6	5	1.7

*Highest $\bar{x}$ score of the frequency of play interactions in each category of handicapped subjects.

Table 3

ADULT INITIATED PLAY INTERACTIONS IN SEGREGATED
AND MAINSTREAMED SETTINGS

Group 1 — Mainstreamed Settings
Group 2 — Segregated Settings

Adult Initiated Play	FALL 1979		SPRING 1980	
	Number of Cases	Mean	Number of Cases	Mean
Group 1	15	3.8	15	3.1
Group 2	15	6.8	15	6.6

4. The investigator alone collected data. using Instrument B, having validated the tool earlier in two pilot situations with a research assistant at Oakland University. Ninety-four percent reliability was established.

Hypothesis 1:

There will be a higher frequency of play in segregated settings than in mainstreamed settings.

During the two data collections (Fall, 1979 and Spring, 1980) a higher frequency of play is recorded in each of Piaget's levels of play and Parten's play categories for the subjects in the mainstreamed preschool classroom.

Hypothesis 2:

Depending on the category of handicapped, emotional impairment, physical impairment or hearing impairment, the predominant category of the frequency of play will be varied in the mainstreamed and segregated settings.

According to the data collection the following categories of handicapped preschoolers had the highest frequency of play in Parten's play categories. The findings of the fall and spring data collection appeared to remain consistent.

- Onlooking Play: Hearing impaired mainstreamed subjects
- Solitary Play: Emotionally impaired segregated subjects
- Parallel Play: Physically impaired mainstreamed subjects
- Associative Play: Emotionally impaired mainstreamed subjects
- Cooperative Play: Hearing impaired mainstreamed subjects

Hypothesis 3:

There will be a larger number of adult initiated behaviors by teachers/aides in the segregated settings, than in the mainstreamed settings.

The data appears to be consistent in that the adult initiated play is, more frequent in the segregated classrooms than in the mainstreamed classrooms.

The play categories for all of the handicapped subjects in mainstreamed settings had higher mean scores, based on frequencies of interactions, in the onlooking, parallel, associative and cooperative areas of play and lower mean scores, based on frequencies of play in the solitary play category. Therefore, in this study the data show handicapped children in mainstreamed settings have a higher frequency of play with or beside children than do handicapped subjects in segregated classrooms. It could be further stated that with this greater frequency of play contact between peers in mainstreamed settings, the basis for Public Law 94-142 of mainstreaming handicapped preschoolers, appears to be realized in this study.

The studies of Guralnick, Cooke, Appoloni, Snyder and Cooke assumed, based on previous studies, that preschool mentally retarded subjects could not play with nonhandicapped preschoolers without previous training of the nonhandicapped peer to serve as a model for play.

Although this study did not include mentally retarded preschoolers in the target population, the mainstreamed emotionally, hearing and

physically impaired subjects had high frequency scores in the Parten play categories of parallel, associative and cooperative play. The mainstreamed hearing impaired individuals had the highest frequency of play in the onlooking category. Parten and Piaget discussed the importance of young children learning through observing others. Perhaps if teachers acted as facilitators of learning in their classrooms, rather than as directors, handicapped subjects would have the time and space to observe nonhandicapped peers and begin to interact in a more natural play setting. This is preferred to the method of training a nonhandicapped child to serve as a model for play. Perhaps in a more natural setting the handicapped preschooler would assimilate and accommodate information at a faster rate than in a structured setting with a limited amount of tasks to be accomplished.

Harlick's study (1978) stated that when a nonhandicapped peer appeared in the area of the handicapped subject, isolated or solitary play diminished. Although this study did not specifically note the frequency of interactions between handicapped and nonhandicapped peers in the mainstreamed sites, in only one site was there more than one handicapped preschooler in the classroom with nonhandicapped peers. With the high mean scores of the frequencies of play interactions in the parallel, associative and cooperative play categories and only one mainstreamed subject at a time in a site, this study appears to have similar findings to the Harlick study; that is, when nonhandicapped

peers play in the area of a handicapped subject, the rate of solitary play is low. The high frequency scores in the associative and cooperative play categories indicate that the handicapped preschooler is interacting with his nonhandicapped peers.

Plummer (1977) studied severely handicapped children in mainstreamed settings and reported findings that there is increased verbal interaction and reduced onlooking behavior in free play settings. Again this study shows the increase of the frequency of play behaviors in mainstreamed settings.

Further study on the ecology of classrooms and its effect on the play interactions of mainstreamed preschoolers is needed.

The mainstreamed and segregated settings in this study employed curriculums that centered on the individual developmental levels of each child in the cognitive, social-emotional, language and fine and gross motor areas. Each setting incorporated both free play and teacher directed activities in the daily schedule. Thus, each child was given an opportunity to initiate, explore, manipulate and practice skills in his environment with a minimum of adult intervention during free play. At other times during the day, the teacher directed learning activities. Nevertheless, certain differences in the mainstreamed and segregated classrooms were noted when the survey of the sites was made.

K. Eileen Allen (1978) concludes in her observations that all children should be educated in the least restrictive environment. The

environment and curriculum must maintain a balance of freedom and structure if young children, both handicapped and nonhandicapped, are to have optimum learning experiences, play and social interactions.

Although the mainstreamed and segregated sites had differences in the materials available to the children and differed in the structure of each program, in general, each setting did provide both free play and teacher directed activities in the daily schedule . . . a balance of freedom and structure. Thus the settings in this study reflect the criteria discussed by Allen as providing optimum learning experiences as well as play and social interactions.

It is recommended that the investigative studies be pursued in a systematic method using descriptive data as well as inferential methods. Perhaps, through a sequence of future studies, a contribution might be made to the understanding of young children in school settings.

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APPENDIX

Instrument A

EVALUATION OF CLASSROOM SITES

Designed by Dr. Doris Sponseller
Revised by Anne Cairns Federlein

I. Name of Site: _____ Type of Program _____

II. Location

a. Type of area served by site

1. Inner city
2. Suburban
3. Outer City
4. Rural
5. University

b. Type of building

1. Public School
2. Church
3. Community Building
4. Own Building
5. Other _____

III. Facilities

a. Requirements of space, sanitation, safety of State, Federal requirements met

1. Well above minimum
2. Somewhat above
3. Minimum

b. Equipment

Amount

Availability and use

exc. adeq. poor exc. adeq. poor

1. Lg muscles
2. Dramatic play
3. Science
4. Small muscle
5. Perceptual
6. Music
7. Art
8. Readiness
9. Books
10. Furniture
11. Outdoor play equipment
12. Sand
13. Water

c. Use of space-arrangement

1. Excellent
2. Adequate
3. So so
4. Not adequate
5. Poor

IV. Program

a. Type of program

1. Federally financed

- a. parent child center
day care
Headstart

2. Public School

- a. parent child center
day care
preschool segregated

3. Private

- a. Individually owned day care
Individually owned nursery
cooperative nursery
church sponsored nursery
church sponsored day care
community sponsored nursery
community sponsored day care

4. Philosophy of Program

- a. _____

5. Was this a "typical" day? ☐ Yes ☐ No

b. Target Population

1. Income level

- a. low
middle
high
mixed

2. Racial composition

- a. one race
biracial
multiracial

3. Age Levels served

- a. 0
1
2
3
4
5
6
7

4. Special Qualities

- a. Emotionally Impaired
Physically Impaired
Hearing Impaired
Non-Handicapped
Combination -- Non-Handicapped and handicapped

c. School day

1. Less than 3 hours
2. 3-5 hours
3. 6-8 hours

d. Structure of daily program

1. Very rigid
2. Somewhat rigid
3. Moderate structure
4. Little structure
5. Very little structure

e. Developmental and Educational focus of program

Extent and Strength

1. Cognitive	1	2	3	4	5
2. Language	1	2	3	4	5
3. Readiness	1	2	3	4	5
4. Social emotional	1	2	3	4	5
5. Perceptual	1	2	3	4	5
6. Creative	1	2	3	4	5
7. Scientific	1	2	3	4	5
8. Physical/Motor skills	1	2	3	4	5

V. Personnel

a. Qualification of staff (total program) Number in each category

1. MA _____
2. BA _____
3. 2 years of college _____
4. Paraprofessional _____
5. Non-professional _____
6. Non-professional high-school student _____

b. Team relationship in a specific group

Number of each

1. Director
2. Teacher
3. Aide
4. Parent
5. High school student

c. Usual Adult-Child ratio

1. 1-5
2. 1-10
3. 1-15
4. 1-20
5. 1-25
6. 1-30
7. Other _____

INSTRUMENT B

PARTEN SOCIAL PLAY CATEGORIES AND PIAGETIAN LEVELS OF PLAY TEST

Observation	Social Play Categories						Piagetian Levels		Games	
	C.I.	A.I.	On-looking	Solitary	Parallel	Associative	Cooperative	Practice	Symbolic	With Rules
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										

Name of Child: _____ Birthdate: _____

Observations will be recorded every three minutes.